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Robert D. Shedd Thomson Licensing LLC PO Box 5312 PRINCETON, NJ 08543-5312			EXAMINER DUONG, DIEU HIEN	
			ART UNIT 2821	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 11/03/2008 has been entered. In virtue of this request, claim 4 is canceled; claims 10-14 are newly added; thus, claims 1-3, 5-14 are currently in the instant application.

Claim Objections

2. Claims 1-3 and 10 are objected to because of the following informalities:

Claim 1:

Lines 3-4 "a line/slot transition" should be changed to - -a line-slot transition- -;

Line 8, "first line" should be changed to - -first feed-line- -;

Claim 2:

Line 3, "a line/slot transition" should be changed to - -the line-slot transition- -;

Lines 3-4, "the line/slot transition" should be changed to - -the line-slot transition- -;

Line 4, "the feed line" should be changed to - -the each feed line- -;

Claim 3:

Line 2, "a line/slot transition" should be changed to - -the line-slot transition- -;

Line 4, "the feed line" should be changed to - -the each feed line- -;

Claim 10:

Lines 3-4, "a line/slot transition" should be changed to - -a line-slot transition- -;

Line 10, "a tangential line/slot transition" should be changed to - -a tangential line-slot transition;

Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1-3 and 5-9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 1, lines 8-10, the recitation "said second feed line being coupled in a zone of the slot forming a first short-circuit, so that two complementary radiation patterns are obtained depending on the feed line selected for the access" is unclear since examiner cannot determine which "the feed line" refers to the first or second feed line and there is insufficient antecedent basis for the limitation "the access" in the claim.

Claims 2-3 and 5-9 are rejected since they are dependent on claim 1.

Clarifications are required.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-3, 5-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fujimoto et al. (US 5,892,487 of record), hereinafter "Fujimoto of record".

Regarding claim 1, as best understood, Fujimoto discloses, in Figures 3-6, a planar antenna with diversity of radiation realised on a substrate (13) comprising

a slot (16) of closed shape dimensioned to operate on a mode higher than a fundamental mode and

at least one feed-line (17, 18) coupled to said slot according to a line-slot transition,

said antenna comprising a first feed-line (17) coupled in zone of the slot forming first open circuit and

a second feed line (18) placed at a distance $d = (2n+1) (\lambda_s / 4)$ from said first line, where n is an integer greater than or equal to zero,

said second feed line (18) being coupled in a zone of the slot forming a first short-circuit, so that two complementary radiations are obtained depending on the feed line selected for the access.

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Fujimoto does not disclose, the perimeter of the slot being selected such that $p = \kappa \lambda_s$ where p is the perimeter of the slot, κ is an integer greater than 1 and λ_s is the guided wavelength in the slot.

However, such difference is not patentable merits since it would have been obvious to one having ordinary skill in the art at the time the invention was made to select the length of the perimeter of the slot to obtain a desired frequency and such modification would have involved a mere change in the length of the perimeter of the slot of the antenna. A mere change in perimeter of the slot is generally recognized as being within level skill in the art.

Note:

- a) With $\kappa = 3$, $p = 3 \lambda_s$ and $n=1$, $d = 3 \lambda_s / 4$. The distance $d = (3 \lambda_s / 4)$ is the distance of the second feed-line (18) placed from the first feed-line (17) as taught by Fujimoto.
- b) The limitation “so that two complementary radiations are obtained depending on the feed line selected for the access” is directed to a manner of function and operation. Since the structure of Fujimoto is exactly the same structure of claimed invention, the structure of Fujimoto would perform the same function as claimed by applicant. In order to distinguish from the cited art, a functional must be expressed as a “means” for performing the specified function, as set forth 35 U.S.C 112, 6th paragraph, and must be supported by recitation in the claim of sufficient structure to warrant the presence of the functional language.

Regarding claim 2, as applied to claim 1, Fujimoto discloses, in Figure 6, wherein the first and second feed-lines terminates in second and third open circuits and are each coupled to the slot according to the line-slot transition.

Fujimoto does not disclose the length of each feed line after the line-slot transition being equals to $(2k'+1) \lambda_m / 4$ where λ_m is the guided wavelength in the each feed-line and k' is a positive or null integer.

However, Fujimoto discloses, in col. 2, lines 48-50, the dimensions and the shapes of feed lines (17a, 18a) are optimized to achieve with a wide frequency bandwidth and a good isolation between the orthogonal and polarizations. Therefore, to employ having the length of each feed line after the line/slot transition being equals to $(2k'+1) \lambda_m / 4$ would have been deemed obvious to person skill in the art of antenna.

Claim 3 is rejected for similar subject matter to claim 2.

Regarding claim 5, as applied to claim 1, Fujimoto discloses, in Figure 6, where the feed-lines (17, 18) are realised in microstrip technology or coplanar.

Regarding claim 6, as applied to claim 1, Fujimoto discloses, in Figures 6 and 8, where the shape of the slot (16) is an annular square, rectangular, polygonal shape or in a clover leaf form.

Regarding claim 7, as applied to claim 6, Fujimoto discloses, in Figure 8, wherein the slot (16) is of rectangular shape and the feed-lines are equidistant from an axis of symmetry of the slot.

Regarding claim 8, as applied to claim 6, Fujimoto discloses, in Figure 8, wherein the slot (16) is of rectangular shape and one of the feed-lines is positioned according to an axis of symmetry of the slot.

Regarding claim 9, as applied to claim 1, Fujimoto discloses, in Figure 1, wherein the fed lines (17, 18) are connected to a transmission/reception means (9) enabling a diversity of reception.

Double Patenting

7. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

8. Claims 1-3, 5-14 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1- 11 of U.S. Patent No. 7,027,001 B2 of record. Although the conflicting claims are not identical, they are not patentably

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distinct from each other because of the claims 1-11 of the above patent including all limitation of the claims 1-3, 5-14 of the instant application.

Terminal Disclaimer

9. The terminal disclaimer filed on 11/03/2008 disclaiming the terminal portion of any patent granted on this application has been reviewed and is NOT accepted since the signature is not listed as Attorney or Agent.

Inquiry

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to DIEU HIEN T. DUONG whose telephone number is (571)272-8980. The examiner can normally be reached on Monday - Friday, from 8:30AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Douglas W. Owens can be reached on 571-272-1662. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

01/14/08

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/Trinh Vo Dinh/

Primary Examiner, Art Unit 2821